PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

ANTHONY J. KINNEY
GARY M. FADER

CASE NO.: BB-1071-A

APPLN. NO.: 09/108,010

GROUP ART UNIT: 1638

FILED: JUNE 30, 1998

EXAMINER: E. MCELWAIN

FOR: SUPPRESSION OF SPECIFIC CLASSES OF SOYBEAN SEED PROTEIN GENES

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Declaration of Dr. Gary Fader Pursuant to 37 CFR §1.132

I, Gary M. Fader, am a citizen of the United States of America, residing at 100 Woods Lane, Landenberg, PA 19350, United States of America, and I declare as follows:

1. I am one of the above-identified inventors named in this application. I am a graduate of the University of Toledo, Ohio with a B.A. degree granted in 1979 in Biology. I received an M.S. in Crop Physiology in 1981 and a Ph.D. in Crop Physiology in 1983 from Purdue University. I was a postdoctoral fellow at the Agronomy Department of the University of Wisconsin from 1983 to 1986. I have been employed by E. I. du Pont de Nemours and Company since 1986 directing and conducting research in developing herbicide resistant plant varieties and developing soybean lines with improved oil and protein qualities. I have built small-scale processing capabilities to produce oils and protein products for evaluation, developed small-scale functional tests predictive of performance in food applications, germplasm screening, manipulation of gene expression using molecular biology, and transformation and regeneration of plants.

2. I have reviewed the Office Action dated March 23, 2001. I am aware that this declaration is being submitted to address the concerns set forth on pages 2 and 3 of the Office Action that "the claims are broadly drawn to the use of an unspecified gene to produce the claimed plants and seeds with reduced levels of glycinin of β-conglycinin, yet the specification only teaches the use of one particular gene to produce said plants and seeds."

3. The rationale for combining the nucleic acid fragments of the invention clearly was disclosed in the specification. It was shown, for the first time, that two or more subunits of β-conglycinin could be suppressed using:

a) a truncated alpha subunit of β-conglycinin in sense orientation with respect to a promoter, or

b) β-conglycinin promoter and leader sequences directing the expression of sense FAD2, or

c) the entire alpha subunit coding region in anti sense orientation with respect to a promoter.

The specification also disclosed that expression of truncated glycinin subunits would suppress glycinin (all subunits).

4. Methods to prepare DNA fragments comprising truncated versions of the different glycinin subunits were set forth in the specification. The specification also described how to use these nucleic acid fragments to practice the invention.

5. The fragments corresponding to the glycinin Group I (G1) and Group II (G4) described in Example 4 of the specification (page 26 at line 3 through page 27 at line 31) were joined in a transcription unit under the control of the KTi promoter and used for bombardment into somatic embryo tissue. The transcription unit containing KTi promoter/G1/G4/KTi 3' end was cloned into the Bam HI site of pKS18HH. Plasmid pKS18HH is described in the application on page 15 at line 40 through page 16 at line 3 and is shown in the application's Figure 3. The plasmid used for bombardment contained:

a) the KTi promoter/G1/G4/KTi 3' end

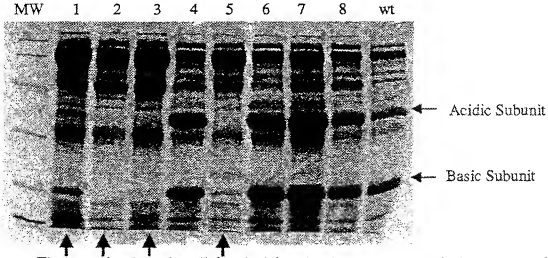
b) the T7 promoter/HPT/T7 Terminator Sequence

c) the CaMV 35S promoter/HPT/NOS 3' end

d) the vector sequences from pSP72 with the beta-lactamase coding region removed.

Bombardment and analyses were conducted as described in the specification on page 17 at line 10 through page 18 at line 37.

6. The results (an example of which is shown in the SDS PAGE gel of protein extracted from seeds of lines derived from regenerated plants) indicate that all the glycinin subunits are suppressed in some of the lines (indicated by arrows at the bottom of the gel).



These results show that all the glycinin subunits are suppressed when truncated forms of the G1 and G4 subunits are expressed in sense orientation under the control of the KTi promoter.

In summary, all of the elements of the claimed invention were provided in the patent application. The data presented in this declaration are consistent with the disclosure set forth in the specification.

Accordingly, one skilled in the art can take these elements, as discussed above, and practice the invention without undue experimentation.

I declare further that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true, and further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Gary M. Fader

6-27-01

Date